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Aloe elegans – an Ethiopian/Eritrean endemic?

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The history and natural distribution of *Aloe elegans* are discussed and the species is described both in habitat in Ethiopia and in cultivation.

History and distribution

Professor Agostino Todaro (1818–1892) was a Sicilian botanist who was assistant at the botanical garden in Palermo, Sicily from 1848 to 1856 and then Director from 1856 until his death. He was not a specialist in succulents in general nor aloes in particular, but nevertheless a number of his publications deal with these plants. His most sumptuous publication is *Hortus Botanicus Panormitanus* which describes a diverse selection of plants cultivated at Palermo (Todaro, 1876–1892). This folio work was issued in 21 parts containing 40 beautiful chromolithographed plates that are based on original paintings by A. Ficarrotta. Succulents feature prominently in that 25 of the plates illustrate aloes, agaves, *Furcraea* (Agavaceae) and stapeliads. All ten of the *Aloe* species included were newly described by Todaro. Nine of these are tropical aloes of which *Aloe elegans*, *A. macrocarpa* and *A. percrassa* are currently recognised (Newton, 2001; Carter *et al.*, 2011).

Todaro's three new Ethiopian aloes were based on plants raised in Palermo from seed collected by Wilhelm Georg Schimper (1804–1878). He was born in Munich, arrived in what is now Eritrea in 1837 and then spent most of the rest of his life in Ethiopia where he died in retirement. He probably collected more type specimens of tropical African plants than any other botanist. Today his collecting localities are often difficult to localise for various reasons: place names cannot now be identified on maps, collection numbers have changed with the years and his hand writing is difficult to read (Carter *et al.*, 2011). So

regrettably we do not now know precisely where Schimper first collected *A. elegans*, apart from being somewhere in modern day Tigray Province, northern Ethiopia.

The seed of *A. elegans* collected by Schimper grew well in Palermo, the seedlings flowered and were used as the basis of the attractive and accurate colour plate published by Todaro (Fig. 1). This is now accepted as the type of the species (Newton, 2001).

Not unsurprisingly the species is quite variable and hence over the years it has



Fig. 1. The first published illustration of *A. elegans* from Todaro (1876–1892).

acquired a few synonyms, including most notably *Aloe abyssinica* var. *peacockii* Baker which is illustrated in Fig. 2. The plant used as the basis for this engraving published in the renowned *Curtis's Botanical Magazine* “was contained in the fine collection of living plants lent lately to the Royal Gardens [at Kew] by J.T. Peacock, Esq., of Hammersmith, and flowered whilst in our charge in February, 1881” (Baker, 1882). It was named in Peacock's honour. Apart from this new variety being “native of Abyssinia”, we are told nothing further about the origin of the plant illustrated. *Aloe abyssinica* var. *peacockii* and *A. aethiopica* (Schweinfurth) Berger were later reduced to



Fig. 2. *Aloe abyssinica* var. *peacockii* (= *A. elegans*) from Baker (1882).

synonymy under *A. elegans* (Reynolds, 1966; Newton, 2001).

Ethiopia and Eritrea formed one country until 1991 but the two now independent countries are usually treated as a single entity in terms of their flora (Edwards *et al.*, 1997). Ethiopia is now a land-locked nation, since the northern coastal region became independent Eritrea. Here these countries are treated as a single phytogeographical unit in terms of the aloes that occur there.

Sebsebe Demissew & Nordal (2010) record *A. elegans* as a species that “grows in rocky slopes on sandstone or limestone, in areas of evergreen bushland or wooded grassland between 1,500 and 2,400m in Tigray (Tigre), Welo, Gojam and Shewa floristic regions in Ethiopia and in Eritrea. It is so far not known anywhere else”. This species can therefore be described as being endemic to north-central Ethiopia and Eritrea (Sebsebe Demissew, Nordal & Stabbetorp, 2001). To put this into wider context, 50 species of *Aloe* are currently recorded for these countries combined within which endemism is high at around 75%. This compares with 100% for Madagascar and around 60% for South Africa.

There is, however, a suggestion online that *A. elegans* may no longer be considered as an Ethiopia/Eritrea endemic. Plants of the World online (accessed 2019) records a broader distribution for this species as W. Sudan, Eritrea and Ethiopia. This has yet to be confirmed, but the endemic status of this species may be under threat.

Ethiopia – Eritrea less so – has a very mountainous, varied topography with much of the interior consisting of high plateaux bisected by deep valleys and gorges (Sebsebe Demissew & Nordal, 2010). Consequently, the vast majority of aloes from these countries, around 95%, are high altitude, mountain-dwellers, growing at over 1,000m above sea level, of which *A. elegans* is a typical example.

***Aloe elegans* in habitat**

My colleague Janet Haresnape visits African countries regularly, both for work and leisure, and I have asked her to photograph any aloes she encounters. In 2011 and 2015 Janet visited Ethiopia on teaching projects with The Open University and during leisure time after completion of the work, she was able to visit a number of aloes in habitat. Most interesting for me and unbeknown to her at the time, she encountered *A. elegans* in its natural environment when she visited the towns of Axum and Lalibela in north-central Ethiopia.

At both these localities Janet found *A. elegans* to be reasonably common (Fig. 3). It forms rosettes that are stemless, or form short stems with age, that are usually solitary (Fig. 4) or more rarely divide form small groups (Fig. 5). The leaves are up to 60cm long and

18cm across, unspotted, grey-green with a reddish margin bearing short brownish-red sharp teeth. Todaro named his new species '*elegans*' meaning elegant, and it does indeed live up to this name.

Its inflorescence is up to 1m tall with up to 8 branches (racemes) (Figs. 1 & 2). It is quite variable in terms of the length of the racemes and flower colour varies from yellow, through orange to red. Gilbert & Sebsebe Demissew (1997) noted that "there is some suggestion of a correlation between dense inflorescences and yellow flowers as opposed to more elongated inflorescences and red flowers. Both forms occur together and we see no justification for recognition of infraspecific taxa". Red and yellow forms of the same species growing together (sympatrically) have been reported for other species of *Aloe*, for example, *A. pearsonii*



Fig. 3. *Aloe elegans* growing on rocky slopes near the town of Axum at 2,100 m, April 2015. Photo: Janet Haresnape.



Fig. 4. *Aloe elegans* growing near the road between the airport and the town of Lalibela at 2,400m. Photo: Janet Haresnape.



Fig. 5. Close up of *A. elegans* at Lalibela. Photo: Janet Haresnape.

(Walker & Vanden Bon, 2018). The situation in *A. elegans* is therefore not unique and it is interesting to speculate on an explanation for the maintenance of different flower colour forms: perhaps these attract different bird pollinators.

Sebebe Demissew & Nordal (2010) record the main flowering period of *A. elegans* as from September to December, also occasionally from March to May. Janet visited Ethiopia in February and April outside of the main flowering season so she did not see this species in flower, but it was in fruit (Figs. 6 & 7).

***Aloe elegans* in cultivation**

Currently I have little experience of growing this species in cultivation. Seed collected by Janet has been raised by Barry Tibbetts (Fig. 8). Seedlings grow moderately quickly and are now two years old, so they have a long way to go to reach maturity. Hopefully I will be able to report on their performance in years to come.



Fig. 6. *Aloe elegans* in fruit at Lalibela, February 2011. Photo: Janet Haresnape.

Relatives of *Aloe elegans*

Aloe elegans is related to *A. sinkatana* from the Red Sea Hills of Sudan, which Gilbert & Sebsebe Demissew (1997) suspect may be identical. According to Carter *et al.* (2011), however, *A. sinkatana* “differs significantly in its narrower, sparsely spotted leaves and its shorter racemes with longer pedicels but shorter flowers”. Other than this, currently there are no other obvious close relatives, so *A. elegans* can be viewed as a distinct and attractive species, well worth cultivating where space is not at a premium.

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Fig. 7. Close up of the fruit of *A. elegans*. Photo: Janet Haresnape.

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Fig. 8. Two year old seedlings of *A. elegans* in 9cm pots.